Horticulture & Crop Science Series No. 728 **December 2002**

REPORT of RESULTS from the 2002 OHIO POTATO GERMPLASM EVALUATIONS

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the NORTH-CENTRAL (NCR-84) and NORTHEAST (NE-184) REGIONAL PROJECTS COOPERATING

THE OHIO STATE UNIVERSITY
OARDC

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ACKNOWLEDGMENTS

The work described in this report was funded by grants from the USDA Cooperative State Research, Education, and Extension Service (CSREES) and the Ohio Vegetable and Small Fruit Research and Development Program. Support was also contributed by OARDC, OSU Extension, the Department of Horticulture and Crop Science, Ohio Potato Growers Association, and allied potato industries.

Special thanks to Bayer Corporation, Cerexagri, Inc., Dow AgroSciences LLC, Gowan, Gustafson, and Syngenta Crop Protection, Inc., for support.

Many people assisted with all aspects of the project. Special thanks to Bruce Williams and Eric Chanay of the Department of Horticulture and Crop Science OARDC Research Farm, David R. Miskell, Sonia Walker, Robin Grom, and Paul Martin.

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TABLE of CONTENTS

Section **Page**

Ohio Potato Germplasm Evaluations

Summary 1

Procedures
- Planting 1
- Field observations 1
- Chipping and Cooking Quality Evaluations and Results 2
- Experimental Selections to Watch in the Future 3

Table 1. List of participating breeding programs 4
Table 2. List of entries evaluated 5
Table 3. Marketable yield for standard varieties 1993-2002 6
Table 4. Cultural, nutrient, and pest management practices in 2002 6
Table 5. Seasonal and historical climatic data for the study site 7
Table 6. Soil analysis results for the study site 7

Results
Table 7. Percent stand, maturity, yield and chip quality for NCR-84 8
Table 8. Tuber characteristics for NCR-84 9
Table 9. Percent stand, maturity, yield and chip quality for NE-184 10
Table 10. Tuber characteristics for NE-184 11
Table 11. Percent stand, maturity, yield, and chip quality for selected entries in the Observations Studies 12
Table 12. Tuber characteristics for selected entries in the Observations studies 13
Table 13. Percent stand, maturity, and yield for selected entries in the Observations studies (not chipped) 14

Reference
Tuber Rating System 15
Conversion Table for Specific Gravity 16

Observations at Harvest
NCR-84 17
NE-184 19
Observations 20
Single Observations 23

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OHIO POTATO GERMPLASM EVALUATIONS - 2002

Summary

Ohio cooperates with private and public breeders in the U.S. and elsewhere in evaluating varieties and experimental lines of fresh and processing potatoes. In 2002, we evaluated a total of distinct 167 varieties and experimental lines developed in nine breeding programs (Table 1). Entries were placed into one of four experiments (Table 2) completed at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, OH; North-Central Regional Project 84 (NCR-84), Northeast Regional Project 184 (NE-184), Observation (OB), and Single Observation (SOB). Named varieties were included in at least one study, numbered entries in only one study. Entries were contributed by breeding programs in Alberta, Canada (CAA), Maine (ME), Michigan (MI), Minnesota (MN), New York (NY), North Dakota (ND), Oregon (OR), Wisconsin (WI), and the USDA-ARS (ARS) in Beltsville, MD. A total of 43 entries were contributed by ME, 8 by NY, 5 by WI, 4 by MN, 13 by CAA, 4 by MI, 4 by ND, 1 by OR, 63 by USDA-ARS/Beltsville and 22 various named or numbered varieties. Entries from ARS, CAA, ME, and NY represented the NE-184 Regional Project. Entries from MI, MN, ND, OR, and WI represented the NCR-84 Regional Project.

The studies were established to evaluate the growth and market traits of each entry when grown under non-irrigated conditions in Ohio. The fact that the trials at the OARDC are not irrigated tends to affect the performance of individual entries. In general, heat and drought stress decreased tuber yield and quality in 2002. Marketable yield of six varieties and seasonal rainfall for 1993-2002 at the OARDC are shown in Table 3.

Eighty-eight, fifty-seven, and twenty-two entries were rated as early-, mid-, and late-maturing respectively. Total and U.S. #1 yield averaged 106 and 74 cwt/A across all studies, respectively, with a range of 29-212 (total) and 12-154 (U.S. #1) cwt/A. Average total yield was 156 and 117 cwt/A in the NE-184 and NCR-84 studies, respectively. Twenty-eight entries were rated as producing tubers with good-excellent overall appearance. Based on positive yield and external tuber traits at harvest, tubers from seventy entries were forwarded for measures of specific gravity and chip quality. Twenty-five entries were rated as having acceptable chip quality. Ohio's potato crop are sold fresh market and to potato chip manufacturers. Therefore, as in past years, consumer-oriented aspects of cooking quality are also being assessed in a number of entries.

Procedures

Planting

Seed potatoes were cut on May 14, 15, and 17 and then cured and stored under recommended temperature and humidity conditions at the OARDC until planting on May 23. Table 4 contains information on cultural, nutrient, and pest management practices. Table 6 contains pre-plant soil analysis results. Soil type was a well-drained Wooster silt loam. All

entries in the NCR-84 and NE-184 experiments were replicated three times. Entries in the Observation studies were replicated once, twice, or three times depending on seed availability (Table 2).

Field Observations

Plant stands were recorded five and seven weeks after planting. Whole plots were harvested on October 8-9. At harvest, observations were taken on external tuber characteristics. Observations included tuber shape, color, surface texture, eye depth, general appearance, and uniformity. These observations, along with yield data, determined which entries were included in chip and cooking quality evaluations and which may be evaluated in the 2003 season. In addition tubers were graded for size on October 23 and 29. At grading, 10 randomly selected tubers from each replicate in the NCR-84, NE-184, and Observations studies and 5 randomly selected tubers from the Single Observation study were examined for hollow heart and other internal defects. Scab and external defects were rated in a second random sample of 20 tubers. An 8 lb sample from each entry in the NCR-84 and NE-184 studies and from promising entries in the Observation plots were saved for specific gravity and chipping quality measurements on November 22.

Chipping and Cooking Quality Evaluations

Samples were held in refrigerated storage (44-48° F) October 23 and 29-November 15 and then removed from storage and held under ambient conditions (approx. 70° F) until being processed on November 22.

For chipping quality evaluation, 4 randomly selected tubers were placed in an abrasive peeler and sliced to an approximate thickness of 0.063 inches (approximately 16 slices per inch). Raw slices were rinsed in cold water and then fried in a continuous fryer containing clear liquid shortening maintained at 190°C (372°F). After frying, a representative sample was taken for visual color evaluation by the standards contained in the manual published by the SFA by which chips light in color are scored "1" and very dark chips are scored "5". Chip color was also measured with an Agtron Electronic Model M-350. Agtron readings and chip color are negatively related (high readings indicate lighter chip color). Samples were also evaluated for blistering. The percentage of chips with blister(s) greater than 1 cm (0.39 in.) was recorded.

Cooking quality of a number of entries from all experiments will be assessed using tubers held under refrigerated conditions for three months. These data will be summarized for a report planned in Spring 2003.

Results

Yield, plant and tuber trait, and chipping quality data are present in Tables 7-13. Total and U.S. #1 yield averaged 106 and 74 cwt/A across all studies, respectively, with a range of 29-212 (total) and 12-154 (U.S.#1) cwt/A. Average total and U.S. #1 yield in the NCR84

study was 117 and 65 cwt/A, respectively. Average total and U.S. #1 yield in the NE184 study was 156 and 109 cwt/A, respectively. Eighty-eight entries were rated as early, fifty-seven as mid-season, and twenty-two as late. Of the 119 entries evaluated, overall tuber appearance was rated poor-fair, fair-good, and good-excellent in twenty-seven, sixty, and twenty-eight entries, respectively. Of the entries evaluated for chipping quality, specific gravity was ≥ 1.080 in sixteen entries and chip quality (based on SFA color and percent blistering) was acceptable in twenty-five entries.

1. Entries having an external tuber rating of ≥ 7 (good-excellent) at grading.
    - NCR-84: MN 18747 RUS, NorValley, MSF 313-3, MSE 018-1, ND 2470-27, ND 5822 C-7, B 0564-8
    - NE-184: AF 1470-6, Keuka Gold (NY01), AF 1938-3, Katahdin, Aquilon, Kennebec, Atlantic, AF 1455-20, NY 102, AF 1569-2, B 1240-1, NY 112
    - All entries listed in Tables 11 and 12 (Observations studies).

2. Entries having an external tuber rating of ≥ 7 (good-excellent) at grading and marketable yield $\geq$ the study average.
    - NCR-84: NorValley, MSF 313-3, ND 2470-27, ND 5822 C-7
    - NE-184: Keuka Gold (NY01), AF 1938-3, Katahdin, Aquilon, Kennebec, Atlantic, AF 1455-20, B 1240-1, NY 112
    - Single Observations: AF 2341-3
    - Observation: none

3. Entries having a specific gravity $\geq$ the study average
    - NCR-84: Atlantic, Snowden, MN 18710 RUS, W 1386, W 1201, W 1431, MSF 313-3, MSE 018-1, A 9014-2, ND 2470-27, ND 5822 C-7, B 0766-3
    - NE-184: B 1425-9, AF 1938-3, Aquilon, Snowden, ARS W96 40022-5, ARS W96 4654-1, Atlantic, AF 1455-20, NY 102, NY 115, B 1240-1
    - Single Observations: AF 222-2, AF 2326-1, B 2135-163
    - Observation: B 0564-9, B 0564-8, B 1240-1, B 1870-17

4. Entries having a chip score of ≤ 3.
    - NCR-84: NorValley, W 1201, W 1431, ND 2470-27, B 0564-8
    - NE-184: W 1242, ARS W96 4654-1, Atlantic, NY 102, AF 1569, NY 115, B 1223-4, NY 112
    - Single Observations: AF 2341-3, AF 222-2, AF 2360-2, V 15-27, B 1235-163
    - Observation: B 2001-197

Experimental Selections to Watch in the Future

- AF 1470-6, AF 1569-2, B 1240-1, B 1870-17, V 78-25

Table 1. List of programs participating in the 2002 Ohio Potato Germplasm Evaluations.

Number	Program	Genotypic Code(s)	2002 experiment				Total
			NCR-84	NE-184	Observation	Single[1]	
			# entries in experiment				
1	Oregon	A	1				**1**
2	Univ. Maine						**43**
		AF		7		33	40
		VW				3	3
3	USDA						**64**
	ARS	ARS		2			2
	Beltsville	B	2	3	37	20	62
4	Michigan State Univ.						**4**
		MSE	1				1
		MSF	3				3
5	Univ. Minnesota	MN	4				**4**
6	North Dakota State Univ.	ND	4				**4**
7	Cornell Univ.						**8**
		NY		4	2		6
		U			1		1
		T # only			1		1
8	Ag and Agri-Food Canada	V	3			10	**13**
9	Univ. Wisconsin						**5**
		W	4				4
		CV	1				1
	various	named/# variety	7	9	10		**26**
	Total		30	25	51	66	**172***

[1] refer to number of single-row replicates. All other experiments contained three replicates.

* number higher than reported due to varieties in two trials. Actual number is 167

Table 2. List of varieties and experimental lines planted in the potato germplasm evaluations at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, OH in 2002.

Regional Project and Experiment

NE-184	NCR-84	Observation	Single Observation	
1 AF 1470-6	1 Atlantic	1 B 1871-1	1 VW 9309-9	50 V 78-28
2 B 1425-9	2 Snowden	2 B 1991-126	2 AF 2291-10	51 V 15-72
3 Dark Red Norland	3 MN 18710 RUS	3 B 0564-9	3 AF 2341-3	52 V 135-1
4 W 1242	4 MN 18747 RUS	4 B 1952-2	4 AF 2219-10	53 V 76-13
5 Keuka Gold (NY01)	5 MN 19252 R	5 B 2021-3	5 AF 2222-2	54 V 15-71
6 Superior	6 NorValley	6 B 2017-2	6 AF 2351-7	55 V 18-5
7 AF 1938-3	7 Red Pontiac	7 B 1145-2	7 AF 2215-1	56 V 78-25
8 Katahdin	8 Russet Norkotah	8 B 1971-11	8 AF 2349-3	57 B 2079-6
9 Aquilon	9 MN 15620LR	9 B 1529-1	9 AF 2351-3	58 B 2098-8
10 Chieftain	10 W 1386	10 B 0984-1	10 AF 2261-1	59 B 2100-8
11 Snowden	11 Dark Red Norland	11 B 1491-5	11 AF 2267-8	60 B 2079-7
12 ARS W96 40022-5	12 Russet Burbank	12 B 0564-8	12 AF 2353-1	61 B 2135-163
13 ARS W96 4654-1	13 W 1836-3 Russet	13 NY 127	13 AF 2322-4	62 B 2069-1
14 Kennebec	14 W 1201	14 19298 (Larson Farms)	14 AF 2363-11	63 B 2078-1
15 Atlantic	15 W 1431	15 96013-1 (Larson Farms)	15 AF 2326-1	64 B 2133-124
16 AF 1455-20	16 MSF 313-3	16 Satina	16 AF 2207-4	65 B 1523-4
17 NY 102	17 MSE 018-1	17 Katahdin	17 AF 2351-2	
18 Yukon Gold	18 MSE 221-1	18 Langlade	18 AF 2259-7	
19 AF 1569-2	19 MSE 202-3 Russet	19 Reba	19 AF 2351-6	
20 NY 115	20 A 9014-2	20 Sandy	20 AF 2351-4	
21 B 1223-4	21 ND 2470-27	21 NY 129	21 AF 1921-4	
22 B 1240-1	22 V 0498-9	22 T 17-2	22 AF 2363-9	
23 AF 1775-2	23 ND 5084-3R	23 B 2001-197	23 AF 2276-8	
24 AF 1758-7	24 ND 5822 C-7	24 B 1240-1	24 AF 2366-1	
25 AF 1763-2	25 ND 3196-1R	25 B 1960-18	25 AF 2211-4	
26 NY 112	26 V 0498-1	26 B 1870-17	26 AF 2215-5	
	27 CV 98023-2	27 B 1880-4	27 AF 2268-6	
	28 V 0497-1	28 B 1884-9	28 AF 2242-10	
	29 B 0564-8	29 B 1763-4	29 AF 2206-9	
	30 B 0766-3	30 B 2003-136	30 AF 2360-2	
		31 B 0811-4	31 AF 2293-2	
		32 B 2024-26	32 AF 2267-7	
		33 B 1958-53	33 VW 9501-5	
		34 B 2033-3	34 VW 9503-4	
		35 B 2001-186	35 AF 2269-1	
		36 B 1873-4	36 B 2066-3	
		37 B 1806-8	37 B 2100-2	
		38 B 1991-129	38 B 2125-156	
		39 B 1953-3	39 B 2133-123	
		40 B 1956-86	40 B 2078-5	
		41 B 1870-3	41 B 2098-11	
		42 B 1826-1	42 B 2095-1	
		43 B 1873-6	43 B 2133-127	
		44 B 1870-17	44 B 2078-13	
		45 B 1970-1	45 B 2098-1	
		46 B 1816-5	46 B 2100-13	
		47 B 1880-6	47 V 101-9	
		48 U 47-21	48 V 75-9	
		49 Ida Rose	49 V 100-1	
		50 All Blue		
		51 True Blue		

Table 3. Marketable yield of standard varieties grown at the OARDC in Wooster, OH 1993-2002.

	Wooster - U.S. No. 1 (cwt/A)									
Variety	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Atlantic	213	268	214	288	216	196	152	175	213	125
Katahdin	138	312	207	339	178	205	238	204	61	103
Kennebec	179	223	180	--	188	151	118	242	184	116
Russet Burbank	--	--	--	--	--	--	--	150	41	19
Superior	170	267	184	241	245	167	165	174	66	100
Yukon Gold	--	262	204	--	170	248	174	224	165	103
Rainfall (inches, July-Aug.)	2.81	7.08	6.85	5.51	4.64	6.31	5.67	5.22	6.20	2.83

Table 4. Cultural, nutrient, and pest management practices for the potato germplasm evaluations completed at the OARDC in Wooster, OH in 2002.

Date Planted	May 23, 2002	
Date Harvested	October 8-9, 2002	
2001 Main Crop	Sudan grass	
2001 Cover Crop	wheat	
Fertilizer	10-20-20	600 lb/A preplant (disc-in) 600 lb/A at planting
Herbicide	May 27, 2002 Dual II (2 pt/A) + Sencor 75 DF (1 lb/A)	
Spacing Between Hill x Row	1' x 3'	
Plot Size	3' x 30'	
Soil Conditions at Planting	moist	
Irrigation (inches)	none	
Sprays Applied:	May 23	Admire (1 pt/A)
	June 13	Dithane (1 lb/A)
	June 19	Dithane (2 lb/A) and Kocide (1 lb/A)
	June 28	Dithane (2 lb/A) and Phaser 3EC (1 pt/A)
	July 03	Bravo 720 (1.5 pt/A)
	July 12	Dithane (2 lb/A)
	July 17	Dithane (2 lb/A) and Phaser 3EC (1 qt/A)
	August 01	Bravo Ultrex (2 pt/A) and Asana (10 oz/A)
	August 17	Bravo (2 pt/A) and Asana (20 oz/A)
	August 26	Dithane DF (2 lb/A)
	September 04	Dithane DF (2 lb/A)
	September 13	vine killer Rely (3 pt/A)

Table 5. Seasonal and historical climatic data for the potato germplasm evaluations completed at the OARDC in Wooster, OH in 2002.

	May (23-31)	June	July	August	September	October (1-8)
Avg. High Temp. (F)	78.5	83.4	87.9	86.0	81.4	73.8
Avg. Low Temp. (F)	51.0	58.2	62.4	60.4	53.7	51.5
Avg. Temp. (F)	64.2	70.5	75.3	72.9	67.1	62.3
Normal Avg. Temp. (F)	61.8	67.6	71.5	69.9	63.4	56.4
2002 Total Precip. (in.)	0.98	3.25	0.86	1.97	3.56	0.25
50-year Avg. Precip. (in.)	1.25	3.94	4.10	3.63	3.14	0.69
2002 Precip. deficit/surplus (in.)						
period	-0.27	-0.69	-3.24	-1.66	0.42	-0.44
cumulative	-0.27	-0.96	-4.20	-5.86	-5.44	-5.88

Table 6. Soil analyses for land used in the potato germplasm evaluations completed at the OARDC in Wooster, OH in 2002.

Factor	Level
pH	5.61
P (µg/g)	57
K (µg/g)	105
Ca (µg/g)	810
Mg (µg/g)	206

Soil analyses conducted at Service Testing and Analytical Research (STAR) Lab at the OARDC.

Table 7. Percent stand, maturity, yield and chip quality for entries grown in the Ohio NCR-84 Regional Project experiment in 2002.

Entry #	Entry Name	Stand %	Plant Maturity[1]	Total cwt/A	US # 1 cwt/A	US #1 %	B Size %	Cull %	Specific Gravity[2]	Chip Color[3]	Blister[4] %	Agtron 350
1	Atlantic	87	3	139	120	86	6	7	1.080	4	0	19
2	Snowden	87	4	186	154	83	9	8	1.077	3-4	0	28
3	MN 18710 RUS	73	6	117	69	59	14	27	1.073	4	20	27
4	MN 18747 RUS	63	2	76	29	39	11	51	1.063	4	10	27
5	MN 19252 R	77	5	118	62	53	18	30	------	----	----	----
6	NorValley	71	5	121	69	57	15	28	1.069	3	30	40
7	Red Pontiac	63	7	107	56	52	12	36	< 1.060	5	40	17
8	Russet Norkotah	76	1	108	43	40	20	40	1.064	5	20	16
9	MN 15620LR	40	4	54	17	32	20	48	------	----	----	----
10	W 1386	80	4	154	83	54	10	36	1.078	3-4	10	35
11	Dark Red Norland	87	2	148	90	61	4	35	1.063	5	0	17
12	Russet Burbank	91	6	103	19	18	36	46	------	----	----	----
13	W 1836-3 Russet	92	9	120	44	37	22	41	1.070	5	0	26
14	W 1201	74	6	114	52	45	8	46	1.083	3	0	41
15	W 1431	88	6	148	67	45	7	48	1.077	2-3	0	41
16	MSF 313-3	69	6	117	68	58	11	31	1.075	3-4	0	36
17	MSE 018-1	51	6	108	62	58	7	35	1.083	4	0	30
18	MSE 221-1	84	5	124	71	57	6	37	1.069	4	10	21
19	MSE 202-3 Russet	71	3	89	33	37	24	39	------	----	----	----
20	A 9014-2	65	5	118	60	51	6	43	1.081	4	10	25
21	ND 2470-27	78	6	178	118	66	8	26	1.073	3	0	37
22	V 0498-9	28	2	60	36	60	1	39	1.063	4-5	10	18
23	ND 5084-3R	69	7	157	111	71	7	23	< 1.060	5	0	11
24	ND 5822 C-7	95	8	173	108	62	4	33	1.083	3-4	10	37
25	ND 3196-1R	82	1	93	50	54	10	36	1.063	5	10	12
26	V 0498-1	74	1	82	39	48	16	36	< 1.060	5	0	18
27	CV 98023-2	79	4	146	71	48	19	32	1.066	5	0	19
28	V 0497-1	28	1	48	30	62	15	23	1.067	4	20	31
29	B 0564-8	51	2	75	38	51	8	41	1.067	3	10	30
30	B 0766-3	72	7	116	80	68	4	28	1.076	3-4	0	32
	Average	71	4	117	65	54	12	34	1.072	4	8	26

[1] See reference table for rating system on page 15.

[2] See reference table on page 16 for starch and dry matter conversions.

[3] SFA Standard (1 = light, 5 = dark).

[4] Percentage of chips that developed blisters greater than 20 mm in diameter during the frying process.

Table 8. Tuber characteristics for entries grown in the Ohio NCR-84 Regional Project experiment in 2002.

		External[1]					Internal[2]			
Entry #	Entry Name	Skin Color	Skin Texture	Tuber Shape	Eye Depth	Overall Appearance	Hollow Heart	Vascular Discoloration	Internal Necrosis	% Defected tubers
1	Atlantic	6	5	1	1	3	0	0	5	50
2	Snowden	6	5	1	1	3	0	8	0	80
3	MN 18710 RUS	7	6	1	7	4	0	0	1	10
4	MN 18747 RUS	7	6	3	1	7	0	0	0	0
5	MN 19252 R	3	6	1	6	3	0	0	0	0
6	NorValley	2	6	2	8	8	0	0	2	20
7	Red Pontiac	3	8	2	5	5	0	0	1	10
8	Russet Norkotah	5	4	5	9	5	0	0	0	0
9	MN 15620LR	3	8	3	9	1	0	0	0	0
10	W 1386	6	6	2	9	6	0	0	2	20
11	Dark Red Norland	3	6	2	5	3	0	0	2	20
12	Russet Burbank	7	6	2	5	1	0	0	0	0
13	W 1836-3 Russet	5	4	4	9	1	0	0	1	10
14	W 1201	6	6	2	5	6	0	0	1	10
15	W 1431	6	6	2	3	3	0	0	3	30
16	MSF 313-3	6	5	2	7	7	0	0	2	20
17	MSE 018-1	6	5	3	8	7	0	1	6	70
18	MSE 221-1	6	5	2	7	6	0	0	5	50
19	MSE 202-3 Russet	5	4	4	9	5	0	0	2	20
20	A 9014-2	6	3	4	8	3	0	0	8	80
21	ND 2470-27	7	8	1	8	7	0	0	7	70
22	V 0498-9	2	8	2	3	6	0	0	4	40
23	ND 5084-3R	2	9	2	5	3	0	2	5	70
24	ND 5822 C-7	7	6	2	6	7	0	1	9	100
25	ND 3196-1R	2	8	2	5	3	0	0	6	60
26	V 0498-1	3	8	2	9	3	0	0	8	80
27	CV 98023-2	3	6	3	8	3	0	0	7	70
28	V 0497-1	7	6	1	8	6	0	0	7	70
29	B 0564-8	6	5	1	7	7	0	0	4	40
30	B 0766-3	6	6	2	8	3	0	0	5	50

[1] See reference table for rating system on page 15.

[2] Number of tubers out of 10 tubers that contain the defect.

Table 9. Percent stand, maturity, yield and chip quality for entries grown in the Ohio NE-184 Regional Project experiment in 2002.

Entry #	Entry Name	Stand %	Plant Maturity[1]	Total cwt/A	US # 1 cwt/A	US #1 %	B Size %	Cull %	Specific Gravity[2]	Chip Color[3]	Blister[4] %	Agtron 350
1	AF 1470-6	75	1	138	90	65	6	29	< 1.060	5	10	14
2	B 1425-9	86	1	147	99	67	8	25	1.086	4	0	26
3	Dark Red Norland	95	1	166	127	77	7	17	1.065	5	0	19
4	W 1242	88	2	121	84	69	11	20	1.073	3	20	45
5	Keuka Gold (NY01)	92	5	171	123	72	8	20	1.067	4-5	20	16
6	Superior	85	1	154	100	65	5	30	1.067	5	10	18
7	AF 1938-3	82	1	156	117	75	5	20	1.080	4-5	30	18
8	Katahdin	88	6	170	118	70	4	26	1.067	5	10	21
9	Aquilon	92	2	184	129	70	9	21	1.079	4	20	34
10	Chieftain	87	1	149	114	77	7	16	1.068	5	50	20
11	Snowden	95	2	152	109	72	10	18	1.077	4	30	26
12	ARS W96 40022-5	92	2	142	89	63	19	18	1.086	4	20	24
13	ARS W96 4654-1	92	6	155	70	45	27	28	1.088	2	40	34
14	Kennebec	83	3	168	116	69	11	20	1.069	5	0	23
15	Atlantic	93	3	163	129	79	4	17	1.083	2	10	32
16	AF 1455-20	86	4	154	117	76	9	15	1.084	4	10	25
17	NY 102	74	2	127	96	76	8	17	1.084	2	20	40
18	Yukon Gold	74	2	136	103	76	7	18	1.074	5	20	26
19	AF 1569-2	90	1	159	133	84	10	6	1.074	3	40	28
20	NY 115	100	1	143	83	58	17	25	1.077	2	30	49
21	B 1223-4	83	5	164	105	64	13	24	1.071	3	0	31
22	B 1240-1	81	8	182	135	74	3	23	1.083	4	30	40
23	AF 1775-2	92	8	212	146	69	5	26	1.074	4	0	33
24	AF 1758-7	83	1	111	59	53	10	37	1.070	4	10	22
25	AF 1763-2	89	1	155	102	65	12	23	1.072	4	40	22
26	NY 112	76	2	163	126	77	3	20	1.071	2-3	10	40
	Average	87	3	156	109	70	9	22	1.076	4	19	28

[1] See reference table for rating system on page 15.

[2] See reference table on page 16 for starch and dry matter conversions.

[3] SFA Standard (1 = light, 5 = dark).

[4] Percentage of chips that developed blisters greater than 20 mm in diameter during the frying process.

Table 10. Tuber characteristics for entries grown in the Ohio NE-184 Regional Project experiment in 2002.

		External[1]					Internal[2]			
Entry #	Entry Name	Skin Color	Skin Texture	Tuber Shape	Eye Depth	Overall Appearance	Hollow Heart	Vascular Discoloration	Internal Necrosis	% Defected Tubers
1	AF 1470-6	7	8	1	8	8	0	0	3	30
2	B 1425-9	6	6	2	9	4	0	0	1	10
3	Dark Red Norland	2	6	2	5	3	0	0	1	10
4	W 1242	7	6	2	7	5	0	0	1	10
5	Keuka Gold (NY01)	7	5	2	9	7	0	0	7	70
6	Superior	6	5	2	4	6	0	0	2	20
7	AF 1938-3	7	8	1	7	7	0	0	1	10
8	Katahdin	7	8	2	6	7	0	1	7	80
9	Aquilon	7	7	1	9	7	0	0	4	40
10	Chieftain	3	7	2	3	5	0	0	2	20
11	Snowden	6	5	2	4	4	0	1	2	30
12	ARS W96 40022-5	5	6	2	5	5	0	3	3	60
13	ARS W96 4654-1	6	5	2	5	2	0	0	1	10
14	Kennebec	7	7	2	9	7	0	0	1	10
15	Atlantic	6	5	2	5	8	0	0	8	80
16	AF 1455-20	7	6	2	9	7	0	0	3	30
17	NY 102	6	6	1	5	7	0	0	1	10
18	Yukon Gold	6	5	2	1	5	0	0	2	20
19	AF 1569-2	6	5	1	5	8	0	0	4	40
20	NY 115	5	5	1	7	6	0	0	2	20
21	B 1223-4	2	5	2	8	5	0	0	1	10
22	B 1240-1	6	5	1	9	7	0	0	4	40
23	AF 1775-2	7	6	2	5	6	0	0	8	80
24	AF 1758-7	6	6	2	7	6	0	0	2	20
25	AF 1763-2	6	6	2	7	6	0	0	3	30
26	NY 112	5	5	2	5	7	0	0	5	50

[1] See reference table for rating system on page 15.

[2] Number of tubers out of 10 tubers that contain the defect.

Table 11. Percent stand, maturity, yield, and chip quality for entries grown in the Ohio Observations Plots and selected for chipping quality evaluation in 2002.

Entry #	Entry Name	Stand %	Plant Maturity[1]	Total cwt/A	US # 1 cwt/A	US #1 %	B Size cwt/A	B Size %	Cull cwt/A	Cull %	Specific Gravity[2]	Chip Color[3]	Blister[4] %	Agtron 350
Single Observation														
3	**AF 2341-3**	62	5	44	32	73	1	3	10	23	1.073	3	20	38
5	**AF 2222-2**	80	3	61	37	61	4	7	19	32	1.089	3	40	37
15	**AF 2326-1**	63	5	48	12	24	2	4	34	71	1.086	5	20	21
30	**AF 2360-2**	77	9	60	36	61	2	3	21	35	1.076	2-3	40	35
51	**V 15-72**	87	1	71	42	60	4	6	24	34	1.074	2	20	45
56	**V 78-25**	60	3	47	22	47	3	5	22	47	1.061	5	20	24
61	**B 2135-163**	70	3	53	31	59	4	8	17	33	1.078	2-3	20	33
	Average	71	4	55	30	55	3	5	21	39	1.077	3	26	33
Observation														
2	**B 1991-126**	61	8	129	92	71	8	6	29	23	1.063	5	40	21
3	**B 0564-9**	74	1	124	91	73	7	6	26	21	1.076	3-4	30	29
12	**B 0564-8**	81	1	131	89	68	16	12	26	20	1.073	4	40	30
18	**Langlade**	83	4	157	110	70	8	5	39	25	1.071	4	80	29
23	**B 2001-197**	77	2	139	89	64	2	2	47	34	1.070	3	20	40
24	**B 1240-1**	44	8	114	88	77	4	3	23	20	1.078	4	30	30
44	**B 1870-17**	80	1	119	86	73	20	17	12	10	1.081	5	10	30
	Average	71	3	130	92	71	9	7	29	22	1.073	4	36	30

[1] See reference table for rating system on page 15.

[2] See reference table on page 16 for starch and dry matter conversions.

[3] SFA Standard (1 = light, 5 = dark).

[4] Percentage of chips that developed blisters greater than 20 mm in diameter during the frying process.

Table 12. Tuber characteristics for entries grown in the Ohio Observations Plots and selected for chipping quality evaluation in 2002.

		External[1]					Internal[2]			
Entry #	Entry Name	Skin Color	Skin Texture	Tuber Shape	Eye Depth	Overall Appearance	Hollow Heart	Vascular Discoloration	Internal Necrosis	% Defected tubers
Single Observation										
3	**AF 2341-3**	7	7	1	7	7	0	0	0	0
5	**AF 2222-2**	7	6	3	8	5	0	0	3	60
15	**AF 2326-1**	6	6	2	5	6	0	0	4	80
30	**AF 2360-2**	7	7	2	5	5	0	0	0	0
51	**V 15-72**	6	7	2	8	7	0	0	1	20
56	**V 78-25**	6	5	1	5	6	0	0	0	0
61	**B 2135-163**	6	7	2	7	5	0	0	3	60
Observation										
2	**B 1991-126**	7	7	2	8	6	0	0	1	10
3	**B 0564-9**	7	6	1	7	6	0	0	1	10
12	**B 0564-8**	7	6	1	5	5	0	0	0	0
18	**Langlade**	6	6	2	5	6	0	0	7	70
23	**B 2001-197**	7	8	1	8	8	0	0	4	40
24	**B 1240-1**	6	5	1	9	8	0	0	3	30
44	**B 1870-17**	6	6	5	8	7	0	0	3	30

[1] See reference table for rating system on page 15.

[2] Number of tubers out of 5 or 10 tubers that contain the defect in the Single and Double Observations, respectively.

Table 13. Percent stand, maturity, and yield information for entries grown in the Ohio Observations Plots but not selected for chipping quality evaluation in 2002.

	Entry #	Entry Name	% Stand	Plant Maturity	Total cwt/A
S	7	**AF 2215-1**	97	3	61
S	8	**AF 2349-3**	80	3	36
S	19	**AF 2351-6**	77	5	61
S	36	**B 2066-3**	73	3	29
S	40	**B 2078-5**	100	3	49
S	41	**B 2098-11**	83	1	33
S	63	**B 2078-1**	80	1	46
S	64	**B 2133-124**	53	7	41
OB	1	**B 1871-1**	61	1	90
OB	4	**B 1952-2**	68	1	110
OB	5	**B 2021-3**	96	4	136
OB	6	**B 2017-2**	91	4	67
OB	7	**B 1145-2**	80	1	111
OB	8	**B 1971-11**	81	1	142
OB	9	**B 1529-1**	83	4	131
OB	10	**B 0984-1**	78	3	128
OB	11	**B 1491-5**	69	1	109
OB	13	**NY127**	51	2	103
OB	14	**19298 (Larson Farms)**	85	2	115
OB	15	**96013-1 (Larson Farms)**	70	2	119
OB	16	**Satina**	78	8	138
OB	17	**Katahdin**	77	4	146
OB	19	**Reba**	93	3	133
OB	20	**Sandy**	81	4	143
OB	21	**NY 129**	77	4	160
OB	22	**T 17-2**	75	1	122
OB	25	**B 1960-18**	77	2	89
OB	26	**B 1870-17**	80	1	134
OB	27	**B 1880-4**	90	2	147
OB	28	**B 1884-9**	72	1	111
OB	29	**B 1763-4**	91	2	123
OB	30	**B 2003-136**	95	2	164
OB	31	**B 0811-4**	89	1	64
OB	32	**B 2024-26**	82	6	150
OB	33	**B 1958-53**	77	4	158
OB	34	**B 2033-3**	92	4	124
OB	35	**B 2001-186**	79	2	138
OB	36	**B 1873-4**	83	5	145
OB	37	**B 1806-8**	81	1	141
OB	38	**B 1991-129**	63	6	150
OB	39	**B 1953-3**	90	1	110
OB	40	**B 1956-86**	86	3	133
OB	41	**B 1870-3**	90	1	149
OB	42	**B 1826-1**	76	4	142
OB	43	**B 1873-6**	88	1	141
OB	45	**B 1970-1**	87	1	104
OB	46	**B 1816-5**	80	1	131
OB	47	**B 1880-6**	87	1	149
OB	48	**U 47-21**	72	2	158
OB	49	**Ida Rose**	71	7	134
OB	50	**All Blue**	92	4	89
OB	51	**True Blue**	99	4	53

[1] Entries lacking yield data were not harvested.

TUBER DATA RATING SYSTEM FOR POTATO VARIETY TRIALS

Tuber Skin Color
1. Purple
2. Red
3. Pink
4. Dark Brown
5. Brown
6. Tan
7. Buff
8. White
9. Cream

Skin Texture
1. Part. russet
2. Heavy russet
3. Mod. russet
4. Light russet
5. Netted
6. Slight netting
7. Moderately
8. Smooth
9. Very smooth

Tuber Shape
1. Round
2. Mostly round
3. Round to oblong
4. Mostly oblong
5. Oblong to long
6. Mostly long
7. Long
8. Cylindrical

Eye Depth
1. VD
2. --
3. D
4. --
5. Intermediate
6. --
7. S
8. --
9. VS

Appearance
1. Very poor
2. --
3. Poor
4. --
5. Fair
6. --
7. Good
8. --
9. Excellent

PLANT RATING SYSTEM

Plant Type
1. Decumbent-poor canopy
2. Decumbent-fair canopy
3. Decumbent-good canopy
4. Spreading-poor canopy
5. Spreading-fair canopy
6. Spreading-good canopy
7. Upright-poor canopy
8. Upright-fair canopy
9. Upright-good canopy

Air Pollution
0. Dead
1. Decreasing plant appearance
2. with varying degrees
3. of defoliation
4.
5. most leaves have symptoms, but generally appearance is still good
6. good plant condition with decreasing
7. percent of foliar symptoms
8.
9. no symptoms

Plant size
1. Very small
2. +
3. Small
4. +
5. Medium
6. +
7. Large
8. +
9. Very large

Plant Maturity
1. Very early
2. Early
3. +
4. Medium early
5. Medium
6. Medium late
7. +
8. Late
9. Very late

Plant Appearance
1. Very poor
2. Poor
3. +
4. --
5. Fair
6. +
7. --
8. Good
9. Excellent

Conversion Table for Specific Gravity of Potato Tubers to Content of Starch and Dry Matter % (Calculated from Von Scheele equations: % starch = 17.565 + 199.07 (Sp. Gr.-1.0988); % dry matter = 24.181 + 211.04 (Sp. Gr.-1.0988)

Specific Gravity	Starch %	Dry Matter %	Specific Gravity	Starch %	Dry Matter%
1.050	7.85	13.88	1.081	14.02	20.43
1.051	8.05	14.09	1.082	14.22	20.64
1.052	8.25	14.31	1.083	14.42	20.85
1.053	8.45	14.32	1.084	14.62	21.06
1.054	8.65	14.73	1.085	14.82	21.27
1.055	8.85	14.94	1.086	15.02	21.48
1.056	9.04	15.15	1.987	15.22	21.69
1.057	9.24	15.38	1.088	15.41	21.90
1.058	9.44	15.57	1.089	15.61	22.11
1.059	9.64	15.78	1.090	15.81	22.33
1.060	9.84	15.99	1.091	16.01	22.54
1.061	10.04	16.21	1.092	16.20	22.75
1.062	10.24	16.42	1.093	16.41	22.96
1.063	10.44	16.63	1.094	16.61	23.17
1.064	10.64	16.84	1.095	16.81	23.38
1.065	10.84	17.05	1.096	17.01	23.59
1.066	11.04	17.26	1.097	17.21	23.89
1.067	11.23	17.47	1.098	17.41	24.01
1.068	11.43	17.68	1.099	17.60	24.22
1.069	11.63	17.89	1.100	17.80	24.44
1.070	11.83	18.10	1.101	18.00	24.65
1.071	12.03	18.32	1.102	18.20	24.86
1.072	12.23	18.53	1.103	18.40	25.07
1.073	12.43	18.74	1.104	18.60	25.28
1.074	12.63	18.95	1.105	18.80	25.49
1.075	12.83	19.16	1.106	19.00	25.70
1.076	13.03	19.37	1.107	19.20	25.91
1.077	13.22	19.58	1.180	19.40	26.12
1.078	13.42	19.79	1.109	29.60	26.34
1.079	13.62	20.00	1.110	19.79	26.55
1.080	13.82	220.21	1.111	19.99	26.76

Factors Affecting the Specific Gravity of the White Potato in Maine. Maine Agricultural Experiment Station. Bulletin 583. May 1959.

Potato Germplasm Evaluation 2002
Crop Observations Taken at Harvest

The following observations were made at harvest on Oct 8 & 9, 2002, by David Kelly and Matt Kleinhenz. The identity and internal quality of the genotype being evaluated were not known at evaluation.

NC1	**Atlantic**	round-flat; tan; heavy "scurfy"-netted skin; folded; irregular surface; stolons; indented apical; potential processing; blocky-flat; red blotches; one plot had no future and a smooth surface
NC2	**Snowden**	round to round-blocky; light tan to tan; heavy netted-scurfy; red blotches; folded, deep apical; deep eyes; attached stolons; wide range in size; processing potential; one plot had irregular surface and some misshapen tubers
NC3	**MN 18710 RUS**	round-oval; irregular surface; tan; netted; misshapen, no future; one plot had red blotches, slight point, second growth, knobbiness and Fusarium
NC4	**MN 18747 RUS**	round-oval; smooth; buff; knobbiness; one plot had Fusarium, no future, irregular surface, misshapen, second growth, pointed and potential try again
NC5	**MN 19252 R**	round-oval; pink-red; irregular surface; second growth; knobbiness; stolons; pointed; no future
NC6	**Nor Valley**	round-oval; buff; light-medium netted; smooth; pointed; stolons; second growth; knobbiness; flat; no future
NC7	**Red Pontiac**	round-oval; pink; indented deep eyes; mostly deep apical; knobbiness; second growth; stolons; chain tubers; one plot had sprouting and irregular surface; no future
NC8	**Russet Norkotah**	oblong-long; one plot tan and one light red; light netted; slight russet to russet; irregular surface; second growth; knobbiness; one plot has irregular surface, misshapen, and pointed stem end; no future; jelly end-rot
NC9	**MN 15620LR**	round to oblong; white/cream-pink; cream to red eyes; knobbiness; second growth; no future
NC10	**W 1386**	round-flat; buff; mostly smooth to slightly netted skin; irregular surface; no future; one plot is misshapen, knobbiness, second growth, Fusarium and red blotches
NC11	**Dark Red Norland**	round-oval; light red; irregular surface; slight texture to skin; no future

NC12	**Russet Burbank**	round-flat-oblong; severe misshapen; irregular surface; second growth; knobbiness; pointed; no future
NC13	**W 1836-3 Russet**	round-oval; buff-tan; slightly netted; no future; one plot has knobbiness, no size, pointed, irregular surface, sprouting, stolons, misshapen and second growth
NC14	**W 1201**	round-oval; light tan; slightly netted; scurfy; severe knobbiness; second growth; irregular surface; stolons; pointed; deep apical; one plot has wide range in size, red blotches and chains; no future
NC15	**W 1431**	round-flat; buff; smooth-netted; irregular surface; second growth; misshapen; stolons; red blotches; deep apical; one plot has potential processing, light tan, pitted scab, knobbiness, and buff; no future
NC16	**MSF 313-3**	round-oval; tan; smooth and slightly netted; stolons; red blotches; one plot is tan, uniform, potential processing, no future, buff, knobbiness, second growth and pitted scab
NC17	**MSE 018-1**	round-oval; buff; slightly netted; stolons; pointed; irregular surface; second growth; no future
NC18	**MSE 221-1**	round-oval-flat; red blotches; tan; heavy scurfy; pointed; severe irregular surface; no future
NC19	**MSE 202-3 Russet**	round-oval-oblong-long; light russet; light tan to tan; pointed; second growth; knobbiness; misshapen; one plot is slightly netted and bottleneck; no future
NC20	**A 9014-2**	oval-oblong-long; medium to heavy russet; irregular surface; misshapen; pointed; dumbbell; curved; one plot with potential processing, knobbiness, slightly netted, scab, tan and no russet; no future
NC21	**ND 2470-27**	round; tan; buff; slightly to heavy netted; scurfy; stolons; deep apical; trace second growth; growth cracks; irregular surface; red blotches; one plot with no future, Fusarium, deep eyes, stolons, scaly skin, and shallow apical; processing potential
NC22	**V 0498-9**	round-oval; medium red; large tubers; some misshapen; one plot with indented apical and stolons; no future
NC23	**ND 5084-3R**	round-oval; medium red; mostly smooth; knobbiness; stolons; second growth; pointed; some irregular surface; wide range in size; potential try again
NC24	**ND 5822 C-7**	round-flat; buff; medium texture; trace of irregular surface; trace of misshapen; trace of stolons; red blotches; potential processing; medium size tubers
NC25	**ND3196-1R**	round-oval; medium-deep-uniform red; stolons; pointed; second growth; irregular surface; doubtful to potential try again

NC26	**V 0498-1**	round-oval; light-medium red; irregular surface; one plot with try again, trace second growth, knobbiness, scab, stolons, and misshapen; no future
NC27	**CV 98023-2**	round-oval-oblong; pink to medium red; irregular surface; stolons; Fusarium; second growth; one plot misshapen; no future
NC28	**V 0497-1**	round-flat; light tan to tan; netted; one plot with scurfy, second growth, misshapen, pointed, smooth surface and stolons; no future
NC29	**B 0564-8**	round-flat; buff; slightly netted; wide range in size; stolons; second growth; no future; irregular surface
NC30	**B 0766-3**	round-oval; buff; slightly netted; red blotches; knobbiness; second growth; wide range in size; potential processing
NE1	**AF 1470-6**	round; light tan to tan; smooth to netted; one plot with red blotches, irregular surface, irregular size, stolons and growth cracks; questionable to no future
NE2	**B 1425-9**	round-oval-flat; tan; slight netted; red blotches; misshapen; second growth; knobbiness; no future
NE3	**Dark Red Norland**	round-oval; light red to red; one plot with uniform, irregular surface, second growth, some misshapen, stolons, light skin, variable shape and no future
NE4	**W 1242**	round-oval-flat; buff-tan; slightly netted; red blotches; misshapen; irregular surface; no future
NE5	**Keuka Gold (NY01)**	round; buff to tan; smooth to medium netting; one plot with indented apical, irregular surface, knobbiness, second growth and variable size; no future
NE6	**Superior**	round-oval-flat; light tan; slightly netted; pointed; deep apical; irregular surface; no future
NE7	**AF 1938-3**	round-oval; buff; stolons; wide range of size; one plot with second growth, smooth-netted, red blotches and scab
NE8	**Katahdin**	round-oval-flat; buff; smooth netted; scab; irregular surface; variable in size; no future
NE9	**Aquilon**	round-oval-flat; buff-tan; one plot with red blotches, slightly netted, sprouting, scab and knobbiness; stolons; try again to processing
NE10	**Chieftain**	round-oval; pink; irregular surface; stolons; sprouting; misshapen; no future
NE11	**Snowden**	round; buff to tan; scurfy; smooth to netted; try again to no future; one plot with deep apical, flat, red blotches, irregular surface, stolons and sprouting
NE12	**ARS W96 40022-5**	round-flat; tan; small; irregular surface; sprouting; no future

NE13	**ARS W96 4654-1**	round-oval; tan; knobbiness; second growth; one plot with irregular size, red blotches, smooth-netted and stolons; no future
NE14	**Kennebec**	round-oval; pointed; irregular surface; buff; no future
NE15	**Atlantic**	round-flat; tan; scurfy-netted; stolons; one plot with irregular surface and indented apical; no future
NE16	**AF 1455-20**	round-oval; light tan; some netted; stolons; pointed; irregular surface; variable size; try for processing
NE17	**NY 102**	round-flat; smooth-scurfy; buff to light tan; one plot with light texture, irregular surface, red blotches, stolons, scab and medium sized; try again to no future
NE18	**Yukon Gold**	round-flat; light tan; heavy scurfy; red blotches; stolons; variable size; processing?
NE19	**AF 1569-2**	round-oval; tan; smooth-scurfy; one plot with red blotches, uniform, medium size, and medium netted; try again to potential processing
NE20	**NY 115**	round-flat; buff; smooth netted; red blotches; no future; stolons; irregular surface
NE21	**B 1223-4**	round-oval; light to medium red; second growth; one plot with sprouting, variable size, misshapen, light textured skin, and stolons; no future
NE22	**B 1240-1**	round-oval; tan; scurfy; variable size; pointed; try for processing; large; smooth surface
NE23	**AF 1775-2**	round-oval; buff-tan; red blotches; one plot with irregular surface, wide range in size, lenticels, scab, knobbiness, slightly netted, and sprouting; second growth; stolons; lenticels; scab; no future
NE24	**AF 1758-7**	round-oval; light tan; pink eyes; smooth; try again
NE25	**AF 1763-2**	round-oval; buff; slight netting; sprouting; pointed; second growth; misshapen; no future
NE26	**NY 112**	round; tan; scurfy; uniform; some irregular surface; flat; try for processing
OB1	**B 1871-1**	round-blocky; tan; slightly netted; red blotches; irregular surface; no future
OB2	**B 1991-126**	round-oval; light buff; smooth; good appearance; stolons; try again for processing
OB3	**B 0564-9**	round-oval; buff-tan; slightly netted; one plot with irregular surface, knobbiness, no second growth, smooth surface, moderately indented apical, uniform size and shape; second growth; no future to try again

OB4	**B 1952-2**	round-oval; purple; flat tubers; sprouting; growth crack; smooth skin; no future
OB5	**B 2021-3**	round; medium red; textured skin; stolons; pointed; second growth; try again
OB6	**B 2017-2**	round-oval; light red; pointed; second growth; irregular surface; flat tubers; no future
OB7	**B 1145-2**	round-flat; scurfy; light red; sprouting; no future
OB8	**B 1971-11**	round-oval; pointed; medium tan; netted; no future; red blotches
OB9	**B 1529-1**	round-blocky; bright purple; trace stolons; misshapen; try again
OB10	**B 0984-1**	round; light red; textured skin; irregular surface; misshapen; no future
OB11	**B 1491-5**	round; cream; slightly netted; irregular surface; no future
OB12	**B 0564-8**	round-blocky; tan; netted; red blotches; stolons; irregular surface; try for processing
OB13	**NY127**	round-blocky; medium tan; slightly netted; scab; stolons; irregular surface; no future
OB14	**19298 (Larson Farms)**	round-oval; light red; stolons; sprouting; second growth; no future
OB15	**96013-1 (Larson Farms)**	round; light red/pink; scurfy; irregular surface; no future
OB16	**Satina**	round; cream; fairly smooth; stolons attached; second growth; bright yellow flesh; may have future-try again
OB17	**Katahdin**	round; buff; irregular surface; no future
OB18	**Langlade**	round-flat; smooth-scurfy; buff-tan; red blotches; sprouting; try for processing
OB19	**Reba**	round-oval; tan; slightly netted; irregular surface; no future
OB20	**Sandy**	round; cream; smooth-netted; pointed; irregular surface; variable size; second growth; no future
OB21	**NY 129**	round; red; textured skin; stolons attached; sprouting; try again

OB22	**T17-2**	oval-oblong; smooth; second growth; try again; light-medium red; specialty
OB23	**B 2001-197**	round-oval; buff; fairly smooth; good appearance; try again for processing
OB24	**B 1240-1**	round; medium to dark tan; netted-scurfy; one plot with growth cracks, stolons, irregular size, shallow eyes, uniform size (med-large), and irregular surface; no future to try again for processing
OB25	**B 1960-18**	round; buff; netted; irregular surface; red blotches; scab; no future
OB26	**B 1870-17**	round-oval; brown; netted; sprouting; stolons; no future; red blotches; second growth
OB27	**B 1880-4**	round; light tan; slightly netted; second growth; knobbiness; no future
OB28	**B 1884-9**	round-oval-flat; tan; netted-scurfy; red blotches; second growth; sprouting; no future
OB29	**B 1763-4**	round; purple; fairly smooth; trace knobbiness; second growth; white flesh; no future
OB30	**B 2003-136**	round-flat; light tan; slightly netted; irregular surface; no future
OB31	**B 0811-4**	round-oval; light red; irregular surface; second growth; knobbiness; no future
OB32	**B 2024-26**	round; tan; stolons; second growth; no future
OB33	**B 1958-53**	round-oval; buff; irregular surface; second growth; no future
OB34	**B 2033-3**	round; light red; knobbiness; second growth; pointed tubers; irregular surface; no future
OB35	**B 2001-186**	round-oval; buff; irregular surface; knobbiness; no future
OB36	**B 1873-4**	variable shape (round-oval); buff; smooth skin; second growth; pointed; stolons; no future
OB37	**B 1806-8**	round-oval; cream; second growth; irregular surface; stolons; no future
OB38	**B 1991-129**	round-oval-flat; buff; some irregular surface; netted; stolons; uniform, medium size; try again; scab
OB39	**B 1953-3**	round-oval; tan; netted; irregular surface; stolons; no future
OB40	**B 1956-86**	oval; tan; slightly netted; pointed; secondary growth; sprouting; no future

OB41	**B 1870-3**	round; tan; slightly netted; second growth; sprouting; flat tubers; red blotches; no future
OB42	**B 1826-1**	round-flat; medium buff; netting; irregular size; no future
OB43	**B 1873-6**	round-oval; flat tubers; light tan; heavy netted; red blotches; variable tuber shape; no future
OB44	**B 1870-17**	round; tan; netted; stolons; try again; low yield
OB45	**B 1970-1**	round-oval; tan; smooth-netted; irregular surface; no future
OB46	**B 1816-5**	round-oval; reddish-purple; stolons attached; fairly smooth; try again
OB47	**B 1880-6**	round-oval; tan; netted; small tubers; irregular surface; second growth; no future
OB48	**U 47-21**	round; cream-tan; netted; red blotches; irregular surface; no future
OB49	**Ida Rose**	round-flat; pink-red; scurfy; second growth; stolons; irregular surface; no future
OB50	**All Blue**	oval-oblong; dumbbell; second growth; irregular surface; deep purple; bluish inside; specialty
OB51	**True Blue**	oval-oblong; bright purple; irregular surface; knobbiness; misshapen; true purple; try again
SOB1	**VW 9309-9**	knobbiness; second growth; irregular surface; no future
SOB2	**AF 2291-10**	second growth; pointed; knobbiness; irregular surface; no future
SOB3	**AF 2341-3**	round-oval-flat; buff; red blotches; try again
SOB4	**AF 2219-10**	round-oval; medium tan; knobbiness; irregular surface; variable shape; no future
SOB5	**AF 2222-2**	round; buff; slightly netted; smooth; no second growth; trace knobbiness; try again
SOB6	**AF 2351-7**	round-oval; buff; net; second growth; misshapen; Fusarium; no future
SOB7	**AF 2215-1**	round-blocky-flat; tan; netted-scurfy; indented apical; irregular surface; try for processing
SOB8	**AF 2349-3**	round-oval; increased number of small tubers; medium buff; pointed; second growth; knobbiness; sprouting;

SOB9	**AF 2351-3**	round; buff; irregular size; variable size; no future
SOB10	**AF 2261-1**	round-oval; pointed; knobbiness; irregular surface; red blotches; no future
SOB11	**AF 2267-8**	round-oval; buff; slightly netted; variable size; irregular surface; stolons; no future
SOB12	**AF 2353-1**	round-oval; light tan; netted; knobbiness; second growth; no future
SOB13	**AF 2322-4**	round-oval; medium-dark tan; variable size; sprouting; irregular size; no future
SOB14	**AF 2363-11**	round-flat; deep apical; sprouting; variable size; no future
SOB15	**AF 2326-1**	round; tan; netted; indented apical; stolons; variable size; try again for processing
SOB16	**AF 2207-4**	round-oval; tan; netted; variable size; irregular surface; red blotches; stolons; no future
SOB17	**AF 2351-2**	round; buff; deep apical; deep eyes; irregular surface; no future
SOB18	**AF 2259-7**	round-oval; buff; sprouting; second growth; knobbiness; irregular size; no future
SOB19	**AF 2351-6**	round-oval; buff; slightly netted; irregular surface; deep apical; scab; try again for processing
SOB20	**AF 2351-4**	round-oval; buff; second growth; Fusarium; irregular surface; no future; knobbiness
SOB21	**AF 1921-4**	round-flat; irregular surface; no future
SOB22	**AF 2363-9**	round-oval; tan; netted; variable size; irregular surface; knobbiness; no future
SOB23	**AF 2276-8**	round-oval; tan; slightly netted; pointed; irregular surface; variable size; no future
SOB24	**AF 2366-1**	round-oval; medium buff; netted; knobbiness; second growth; irregular surface; no future
SOB25	**AF 2211-4**	round-oval; tan; netted; variable size; irregular surface; second growth; knobbiness; folded apical; no future
SOB26	**AF 2215-5**	round; scurfy-netted; tan; irregular size; deep apical; variable size; knobbiness; no future

SOB27 AF 2268-6	round-flat; tan; smooth-scurfy; red blotches; variable size; irregular size; irregular surface; no future
SOB28 AF 2242-10	round-oval; tan; netted; irregular surface; red blotches; knobbiness; stolons; no future
SOB29 AF 2206-9	round-oval; medium buff; knobbiness; misshapen; irregular surface; second growth; sprouting; no future
SOB30 AF 2360-2	round-oval; buff; light netted; knobbiness; irregular surface; deep apicals; try again for processing
SOB31 AF 2293-2	round-oval-flat; sprouting; tan; netted; stolons; no future
SOB32 AF 2267-7	round-oval; medium buff; slightly netted; variable size; knobbiness; second growth; irregular size; no future
SOB33 VW 9501-5	variable shape; buff; irregular surface; second growth; knobbiness; no future
SOB34 VW 9503-4	round-oval; medium buff; smooth-slightly netted; scab; variable size; irregular surface; no future
SOB35 AF 2269-1	round-oval-flat; knobbiness; second growth; pointed; scab; irregular surface; no future
SOB36 B 2066-3	round-oval; medium red; irregular surface; misshapen; mostly smooth; try again
SOB37 B 2100-2	oval-round-flat; medium red; stolons; smooth; knobbiness; irregular surface; no future
SOB38 B 2125-156	round-oval; buff; smooth; variable size; irregular surface; no future
SOB39 B 2133-123	round-oval-flat; medium buff; smooth-netted; knobbiness; sprouting; stolons; scab; no future
SOB40 B 2078-5	round; medium red; shallow eyes; smooth-light texture; try again
SOB41 B 2098-11	round-oval; dark red; variable size; irregular size; smooth; try again
SOB42 B 2095-1	round-oval; cream; yellow flesh; second growth; knobbiness; misshapen; no future
SOB43 B 2133-127	round-oval; tan; netted; second growth; knobbiness; irregular surface; misshapen; no future
SOB44 B 2078-13	round-flat; dark red; smooth-netted; variable size; no future

SOB45 B 2098-1	round-oval; light red; sprouting; stolons; painted; no future
SOB46 B 2100-13	round-oval; medium red; knobbiness; second growth; pointed; no future
SOB47 V 101-9	round-blocky; medium buff; variable size; smooth; second growth; knobbiness; no future
SOB48 V 75-9	round-flat; white/light buff; irregular surface; scab; smooth; no future
SOB49 V 100-1	round-oval; tan; slightly netted-scurfy; variable size; pointed; irregular surface; no future
SOB50 V 78-28	round-medium tan; netted; irregular surface; variable size; no future
SOB51 V 15-72	round; medium buff; smooth-slightly netted; uniform shape; red blotches; try again
SOB52 V 135-1	round; buff; irregular surface; no future
SOB53 V 76-13	round-oval-flat; medium buff; smooth-scurfy; irregular surface; no future
SOB54 V 15-71	round-blocky; tan; scurfy-netted; stolons; red blotches; irregular surface; no future
SOB55 V 18-5	round; light buff; variable size; irregular size; light netted; irregular surface; no future
SOB56 V 78-25	round-blocky; light tan; netted-scurfy; red blotches; try again for processing
SOB57 B 2079-6	round-oval; light red; textured; stolons; no future
SOB58 B 2098-8	round-oval; light red; sprouting; irregular surface; stolons; pointed; no future
SOB59 B 2100-8	round-flat; textured-scurfy; dark red; variable size; sprouting; no future
SOB60 B 2079-7	round-oval; light red; low yield; irregular surface; stolons; no future
SOB61 B 2135-163	round; tan; smooth-netted; stolons; knobbiness; try for processing
SOB62 B 2069-1	round-oval; pink-light red; textured; uniform size; no future
SOB63 B 2078-1	round; dark red; scurfy-textured; try again
SOB64 B 2133-124	round-oval; tan; netted-scurfy; uniform size; stolons; try again for processing
SOB65 B 1523-4	round-flat; medium red; second growth; sprouting; no future

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